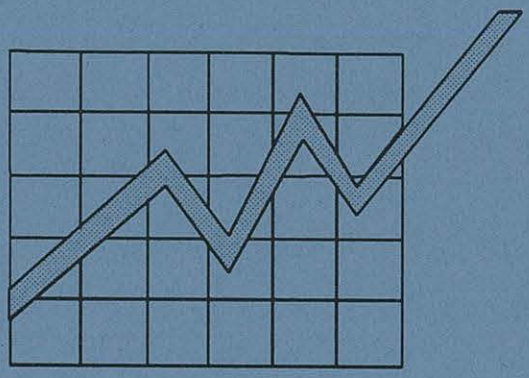
National Ocean Pollution Policy Board

REVIEW OF FY 1993 AGENCY REQUESTS FOR APPROPRIATIONS



TO SUPPORT OCEAN POLLUTION RESEARCH, DEVELOPMENT, AND MONITORING PROGRAMS

FEBRUARY 1992

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National Oceanic and Atmospheric Administration
OFFICE OF THE CHIEF SCIENTIST
National Ocean Pollution Program Office

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REVIEW OF FY 1993 AGENCY

REQUESTS FOR APPROPRIATIONS

TO SUPPORT OCEAN POLLUTION RESEARCH, DEVELOPMENT, AND MONITORING PROGRAMS

FEBRUARY 1992

U.S. DEPARTMENT OF COMMERCE
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PREFACE

The National Ocean Pollution Planning Act of 1978 (P.L. 95-273; NOPPA), as amended by the Omnibus Budget Reconciliation Act of 1986 (P.L. 99-272; enacted April 7, 1986), called for the National Oceanic and Atmospheric Administration (NOAA) to establish and support an interagency National Ocean Pollution Policy Board consisting of representatives from all Federal agencies that conduct or support marine pollution research, development, and monitoring programs. Each agency in the Federal Plan for Ocean Pollution Research, Development, and Monitoring is required under Section 3A of NOPPA to prepare and submit to the Policy Board a summary of its annual requests for appropriations to support ocean pollution research, development, and monitoring programs. The requests for appropriations are reviewed by the Policy Board which subsequently submits a report to the Office of Management and Budget (OMB) and the Congress concerning these budget requests. This report complies with the legislative requirement for the Board to conduct a review of FY 1993 ocean pollution research, development, and monitoring budget requests and to submit a report on the budget review to OMB and the Congress. Under NOPPA, OMB is to review the requests for appropriations as an integrated, coherent, multiagency request and is to take into account the review of the Board.

This report contains four sections:

1. Introduction
2. Overview of Funding Patterns
3. Major Changes Proposed in the FY 1993 Agency Request for Appropriations
4. Consistency of the Appropriations Requests with National Ocean Pollution Priorities.

The "Introduction" provides information on the functioning of the National Ocean Pollution Program under NOPPA. In the section on "Overview of Funding Patterns," relative levels of funding among agencies and time trends in total funding are presented. In the third section major changes proposed in FY 1993 funding are discussed for the different programs directly related to ocean pollution. The nature of, and reasons for, these changes are presented in this section. The final section is a discussion of the overall budget request as compared to national priorities for ocean pollution research, development, and monitoring as presented in the Federal Plan for Ocean Pollution Research, Development, and Monitoring: Fiscal Years 1992-1996.

1. INTRODUCTION

The National Ocean Pollution Planning Act of 1978 (NOPPA) (P.L. 95-273, as amended) requires that the interagency National Ocean Pollution Policy Board prepare and submit to the Office of Management and Budget (OMB) and the Congress a report on budget requests for the National Ocean Pollution Program. The National Ocean Pollution Program is the composite of all programs related to marine pollution research, development, and monitoring activities supported or conducted by Federal departments or agencies. The primary purpose of NOPPA was to establish effective coordination of ocean pollution research, development, and monitoring activities throughout the Federal Government and to assure that Federal programs address national needs and problems. Ocean pollution-related programs are funded by eleven separate Federal departments and independent agencies which support or conduct about 50 individual programs. The budget review process for the National Ocean Pollution Program is intended to supplement the established procedure of submitting individual agency requests through OMB and also to provide a different perspective to OMB and the Congress concerning ocean pollution research budget proposals. Under NOPPA, OMB is to "review the request for appropriations as an integrated, coherent, and multiagency request, taking into account the review by the Board of those requests..."

NOPPA requires that the annual budget review analysis include requests for appropriations to carry out activities under the Federal Plan for Ocean Pollution Research, Development, and Monitoring. In many cases, the ocean pollution-related projects within the agencies and departments are integral components of larger programs which may not have marine pollution studies as their primary focus. For the purpose of this budget analysis, each agency program has been characterized as "directly related to marine pollution" or "indirectly related to marine pollution" using the guidelines presented in Appendix Table 1. This report focuses primarily on the budgets of "direct" programs from FY 1989 through FY 1993. FY 1989 through FY 1992 budgets are

reported here as estimates of actual expenditures. In particular, it should be noted that FY 1992 agency funding levels are still being determined, and that the FY 92 figures presented here represent last year's Presidential request. The FY 1993 budgets reported in this document represent estimates of funding levels that would result for marine pollution research, development and monitoring programs under the budget proposals submitted to Congress.

2. OVERVIEW OF FUNDING PATTERNS

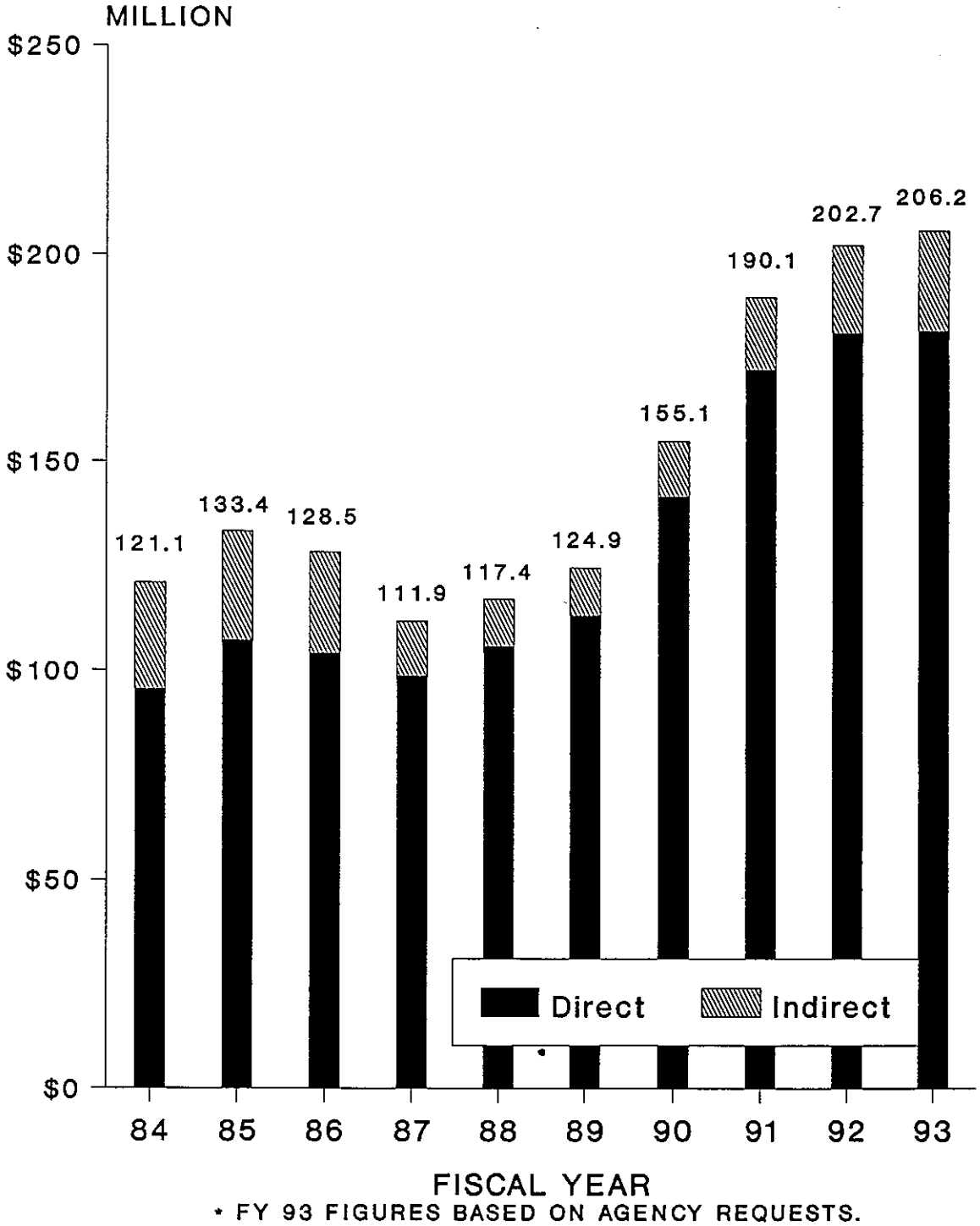
The Presidential budget for appropriations to support research, development, and monitoring programs directly related to ocean pollution total about $181.9 million for FY 1993. In addition, approximately $24.3 million is requested to support research, development, and monitoring efforts that were reported as indirectly related to marine pollution.[1] This budget review focuses primarily on programs directly related to marine pollution. This section of the budget review presents information on relative funding levels requested for the agencies and time trends in funding for the total Federal program.

[1] See Appendix Tables 2 and 3 for budget summaries as well as Table 1 for the definition of "direct" and "indirect" programs.

Trends in Total Funding

Funding levels for the total (direct plus indirect) National Ocean Pollution Program from FY 1984 through FY 1993 are presented in Figure 1. It should also be noted that FY 1992 funding levels are not yet finally determined, therefore comparisons with prior years or with FY 1993 requests are tentative. Total funding for ocean pollution studies in FY 1984 was $121.1 million. From FY 1984 to FY 1985, total Federal expenditures increased by approximately $12 million. Between FY 1985 and FY 1986, Federal expenditures decreased by about $5 million, and then were reduced by almost $17 million from FY 1986 to FY 1987. After this decline, funding began an upward climb, rising to $117 million in FY 1988 and to almost $125 million in FY 1989, and then beginning a strong upward spurt to $155 million in FY 1990 and $190 million in FY 1991. The agency estimates for FY 1992 represent a continued strengthening of support for ocean pollution research, rising to almost $203 million. The $206 million total of agency requests for FY 1993 represents a continued support of many agency base programs, the strengthening of some initiatives, and the completion or winding-down of some studies. This represents a slight increase (about $3 million) from estimated expenditures for FY 1992 and a major enhancement ($16 million) in level of effort compared to estimates of actual expenditures for FY 1991. The proportion of funding devoted to direct programs has ranged from 75% to 92% of the total between FY 1984 and FY 1993.

FIGURE 1. TRENDS IN FUNDING FOR NATIONAL OCEAN POLLUTION PROGRAM*



* FY 93 FIGURES BASED ON AGENCY REQUESTS.

Principal Agencies Requesting Appropriations

The President's budget includes requests for appropriations to support research, development, and monitoring programs directly related to ocean pollution in FY 1993 for the the following agencies, listed in order of size of funding amounts from highest to lowest:

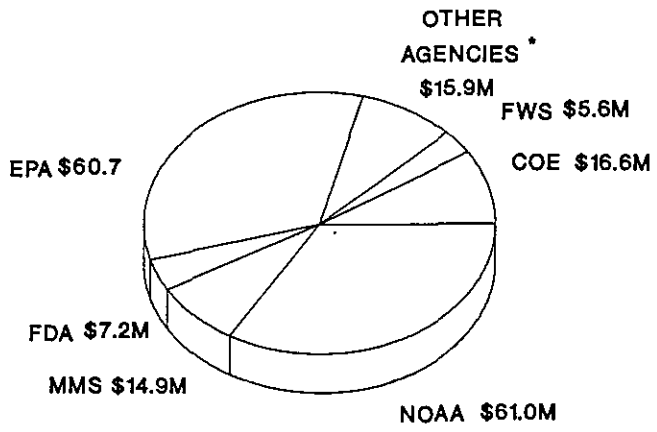
Agency	FY 1993 Requests($/K)
National Oceanic & Atmospheric Administration (NOAA)	$60,970
Environmental Protection Agency (EPA)	60,685
Army Corps of Engineers (COE)	16,621
Minerals Management Service (MMS)	14,930
Food & Drug Administration (FDA)	7,205
Fish & Wildlife Service (FWS)	5,600
Department of Agriculture (USDA)	4,705
U.S. Coast Guard (USCG)	4,432
National Institute of Environmental Health Sciences (NIEHS)	4,347
U.S. Navy (USN)	2,354
Council on Environmental Quality (CEQ)	10
Total Requests for Direct Programs	$181,859

The overall Federal program is dominated by requests for appropriations to NOAA ($61.0 million), EPA ($60.7 million), COE ($16.6 million), and MMS ($14.9 million), as shown in Figure 2(A). Taken together, these four agencies account for 84% of requests for appropriations to support direct programs in FY 1993. Figure 2(B) indicates a similar pattern for FY 1992 estimated expenditures.

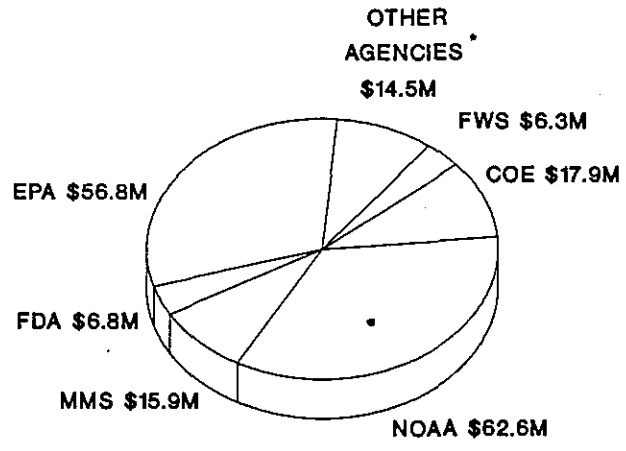
NOAA funds would be used to support a diverse effort consisting of seventeen different programs including studies to improve our ability to assess damages from, and respond to, accidental spills of oil and hazardous materials; research on fisheries ecology

FIGURE 2. DISTRIBUTION OF DIRECT FUNDING AMONG AGENCIES

(A) FY 93 REQUESTS FOR APPROPRIATIONS



(B) FY 92 ESTIMATES OF EXPENDITURES



* USDA/NIEHS/USCG/USN/CEQ

and coastal and estuarine habitats; a program for seafood safety and quality; and studies on the sources, fates, and effects of toxics and nutrients in coastal waters. The EPA would support a very diverse program, both in-house and extramurally, to address a broad spectrum of ocean pollution and water quality issues primarily in estuaries, near-shore zones, and the Great Lakes. Among the issues these programs address are the establishment of limits on priority pollutants, environmental monitoring and analysis of collected data for pollutant levels, impacts of waste disposal, protection of national estuaries from ecosystem degradation, and Great Lakes pollution problems. The COE FY 1993 request is primarily for site-specific studies to support navigation projects (e.g., dredged material disposal issues) and studies on wetlands delineation and mapping, wetlands creation and restoration, and related demonstration projects. The MMS program would focus nearly exclusively on studies conducted under contracts or cooperative agreements to address environmental concerns associated with development of offshore oil and gas resources. The FDA is requesting $7.2 million to improve public health related to seafood safety and contamination. The FWS is requesting $5.6 million in FY 1993 to support ocean pollution-related research on fish and wildlife and to continue the National Wetlands Inventory. The remaining agencies with programs covered by the National Ocean Pollution Program (USCG, USDA, NIEHS, USN, and CEQ) are requesting a total of $15.9 million for direct programs.

3. MAJOR CHANGES PROPOSED IN THE FY 1993 REQUEST FOR APPROPRIATIONS

This section discusses major changes in agency funding proposed in the Presidential budget for FY 1993. Only changes in programs directly related to ocean pollution are included. Because indirect programs typically serve other purposes as well as contributing to the understanding of ocean pollution phenomena, it would be inappropriate to judge levels of funding requested for these programs using ocean pollution-related criteria. In addition, only those programs for which funding will be increased or decreased by approximately $1 million are included in this discussion.

U.S. Department of Commerce: National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) is requesting $61.0 million to support studies directly related to marine pollution research, development, and monitoring in FY 1993. This represents a net decrease of $1.6 million over estimated expenditures in FY 1992. The budget request for NOAA includes the following major changes:

-- Coastal Ocean Program (+$2.4 million). The Coastal Ocean Program (COP) combines all of NOAA's components to develop and implement agency-wide programs to help the Nation solve immediate coastal crises and avoid or reduce future problems. The goals of the COP are to: improve predictions of the effects of coastal ocean pollution on coastal resources in order to help correct and prevent degradation; increase the understanding of ecological functioning of coastal habitats and the impacts of stress on those systems; improve predictions of fish stocks to better conserve and manage living marine resources; and improve predictions of coastal hazards to protect life and property. In addition, two cross-cutting goals are to provide on-line remotely-sensed environmental data and products for integrated analyses of coastal habitats, environmental quality, and coastal hazards; and to ensure that scientific data and information can be easily accessed and used.

The COP budget request for FY 1993 includes $9.5 million to support research and monitoring directly related to marine environmental quality. This initiative will address all five critical areas of the COP--Nutrient Overenrichment, Estuarine Habitats, Coastal Fishery Ecosystems, Toxic Chemical Contamination, and Coastal Hazards--and the two cross-cutting areas, CoastWatch (remotely-sensed environmental data products) and Information Delivery.

This represents an estimated increase of $2.4 million over estimated FY 1992 expenditures. The $2.4 million enhancement will support an emphasis in the chemical contamination area of bioaccumulation research; studies on the effects

of toxic contaminants on growth, fecundity and survival of living marine resources; and new bioeffects surveys in highly contaminated areas of the coast. This research will support NOAA's damage assessment and restoration activities for coastal areas. The enhancement will also support increased efforts to determine the extent of change and the functions of valuable coastal habitats which will assist the development of methods for creating and restoring wetlands. In the area of nutrient over-enrichment, the enhancement will support an emphasis on studying the cause and effects of harmful algal blooms in order to understand their impacts on coastal resources and on quantifying atmospheric nitrogen levels in some east coast estuaries.

-- Seafood Safety and Quality Program (+$1.4 million). In FY 1992 a comprehensive seafood safety and quality program will be conducted in cooperation with the Food and Drug Administration (FDA). The emphasis of the program is in reducing health risks from microbial, biotoxin, and chemical sources, and in providing information on product quality. In FY 1993, NOAA is requesting $15.4 million to support this program. This includes a requested increase over estimated FY 1992 expenditures of $1.4 million. Research will be conducted to address priority health and safety issues. As part of this comprehensive program, a new FDA/NOAA voluntary fee-based inspection service based on Hazards Analysis Critical Control Point (HACCP) protocols will be implemented.

-- Habitat Conservation Program (+$0.7 million). The goal of this program is to provide Federal agencies with information and recommendations on the ecological impacts of proposed actions that would affect the habitats of anadromous (e.g., salmon and steelhead trout), estuarine, and marine resources. These activities require scientific information from ecological research as a basis for habitat conservation efforts. To assess potential adverse ecological impacts, NOAA evaluates Federal projects, wetland permits, hydroelectric project license applications, and proposed outer continental shelf oil and gas development projects. Under this program, NOAA also provides technical assistance on

fisheries habitat matters important to state coastal zone management plans, special area management plans, and proposed marine sanctuaries and estuarine reserves. In addition, the NOAA Habitat Restoration Center provides in-house expertise and coordination for habitat restoration and research.

NOAA is requesting $7.2 million for the Habitat Conservation Program in FY 1993, an increase of $0.7 million over estimated FY 1992 expenditures. This increase is part of an expansion of the interagency effort between the NOAA Habitat Restoration Center and the U.S. Army Corps of Engineers which is designed to: (a) increase coastal fish and shellfish productivity; (b) improve scientific knowledge on the effectiveness of habitat restoration technology; and, (c) improve interagency coordination in other water resource development matters. Funding will also be directed toward the restoration of fish and shellfish habitat through correction of water pollution impacts (e.g., capping of polluted sediments). In addition, research projects will be initiated to provide information on natural and altered ecosystem functions needed to manage important living marine resources habitats. This initiative will also support critical habitat and ecosystems research at Beaufort, North Carolina directly applicable to the fulfillment of statutory mandates.

-- Prince William Sound Oil Spill (-$4.0 million). NOAA is requesting a decrease of $4.0 million in FY 1993 for damage assessment studies of the EXXON VALDEZ oil spill impact on Prince William Sound natural resources. A settlement has been reached with the Exxon Corporation that makes it unnecessary to continue to provide Federal funds for this purpose.

--National Undersea Research Program (-$2.0 million). The Presidential budget does not include funding for the NOAA National Undersea Research Program (NURP) for FY 93. The $2 million estimated funding for the program in FY 92 is being used to develop programs and provide support to scientists and engineers for the study of biological, chemical, geological, and physical processes in the

world's oceans and lakes relating to ocean pollution. A major part of the research program is carried out by a network of National Undersea Research Centers which are located strategically to build and execute the field programs.

Damage Assessment and Restoration Program (-$1.25 million). The NOAA budget request for the Damage Assessment and Restoration Program in FY 93 is $1.25 million, a 50% decrease from the FY 92 level. The program's major objective is to restore coastal and marine natural resources under NOAA's trusteeship that are injured or destroyed by discharges of oil or releases of hazardous substances. This is accomplished by determining and quantifying injuries to natural resources, identifying feasible restoration alternatives and their costs, and then calculating the compensation (damages) to be claimed from potentially responsible parties. Once this investigation is complete, damage claims are referred to the Department of Justice for litigation or settlement. Any recovered damages are used to restore the injured resources and to monitor the effectiveness of the restoration. Because substantial completion of reimbursement from the EXXON VALDEZ settlement is anticipated by NOAA in FY 93, the agency expects sufficient funds to permit this one-time reduction in the amount of Federal support provided to this program.

U.S. Environmental Protection Agency

The Environmental Protection Agency (EPA) is requesting $60.7 million to support studies directly related to ocean pollution research, development, and monitoring in FY 1993. This represents a net increase of $3.9 million over estimated expenditures in FY 1992. The budget request for EPA includes the following major changes:

-- Marine Disposal Research Program (+$0.9 million). This program was established to provide the scientific data and information needed by EPA to regulate waste disposal activities in the marine environment. The core program addresses the short- and long-term environmental effects of the disposal of municipal, industrial, and low-level radioactive waste into the oceans. EPA is

requesting $7.0 million to support these activities in FY 1993. This represents an increase of $0.9 million over estimates of expenditures for FY 1992. These funds will be used to support an initiative to develop a suite of managerially useful indicators and biocriteria to monitor ecosystem health in marine and estuarine waters of the Gulf of Mexico. It is intended that the indicators be quantitative, scientifically defensible, and cost effective.

-- Water Quality Research Program (+$3.3 million). This program includes research activities that relate to establishing limits on substances entering the marine environment such as priority pollutants, toxic substances, pesticides, and carcinogens. EPA is requesting $15.4 million to support these activities in FY 1993. This represents an increase of $3.3 million over estimates of expenditures of FY 1992. These additional funds will be used to support initiatives to study estuary nitrogen and estuarine habitats. The primary focus of the estuary nitrogen program will be to further document nonpoint sources of nitrogen into the estuaries, quantify these loadings, and to focus on the relative amounts entering from the atmosphere compared with other nonpoint sources, e.g., tributaries. The habitat activities will focus on addressing issues related to damage to habitats, restoration measures, and the well-being of newly restored or created habitats.

U.S. Department of Interior: Minerals Management Service

MMS is charged under the OCS Lands Act of 1978 (PL 95-372), as amended, with the responsibility for providing for protection of the human, marine, and coastal environments concomitant with mineral resource development. To meet this goal and the information and administrative requirements of the National Environmental Policy Act of 1969 (PL 91-190), environmental costs and multiple-use conflicts are assessed through the preparation of environmental impacts statements for leasing and development activities. The ocean research, development, and monitoring activities of MMS are embodied in the Environmental Studies Program for which $19.6 million is requested for FY 1993.

-- Environmental Studies Program (-$1.0 million). The Minerals Management Service (MMS) requests $14.9 million in FY 1993 for NOPPA-related environmental research for its Outer Continental Shelf (OCS) Environmental Studies Program. This program is required to establish information needed for prediction and management of the impacts of offshore gas and oil development on the OCS and the nearshore areas which may be affected. The requested FY 1993 funding represents a decrease of approximately $1.0 million relative to the FY 1992 estimated budget for such studies. The requested budget includes funds to establish pilot Coastal Marine Institutes (CMI's) at universities or institutions in States where offshore leasing, exploration, and development activity is prevalent. There would be substantial leveraging of funds earmarked for the CMI's ($3.0 million) through matching contributions of up to $9.0 million by participating institutions.

U.S. Department of Defense: U.S. Army Corps of Engineers

The Army Corps of Engineers (COE) is requesting $16.6 million to support studies directly related to ocean pollution research, development, and monitoring in FY 1993. This represents a net decrease of $1.2 million over estimated expenditures in FY 1992. The budget request for COE includes the following major changes:

-- Environmental Quality Research and Development Studies (+$1.2 million). The COE is requesting $9 million for Environmental Quality Research and Development studies for FY 1993. About $8 million of these funds, which includes the $1.2 million enhancement, will be used to support research and development projects on wetlands. This research will focus on wetlands delineation and mapping techniques, wetlands creation and restoration, and related pilot demonstration projects. Approximately $1 million is being requested to support research on contaminated bottom sediments in the Long-Term Effects of Dredging Operations (LEDO) Program.

-- Navigation Project Environmental Operations and Maintenance Program (-$2.4 million). This program has two components: project studies involving Dredging Operations Technical Support (DOTS) and project studies involving monitoring and related data collection and analysis associated with management of coastal navigation projects. The DOTS Program, among other objectives, provides field offices with protocols for developing strategies for dredged materials disposal in an economically and environmentally sound manner and supports technology transfer which includes the dissemination of information on beneficial uses of dredged materials. Reduction in funding for FY 1993 results mainly from a winding-down of field operations of a study to find regional dredged material management solutions involving San Francisco Bay.

U.S. Department of Transportation: U.S. Coast Guard

The U.S. Coast Guard of the Department of Transportation has historically been the lead agency of the Federal government in response to spills of oil and hazardous materials on water. Following the EXXON VALDEZ oil spill and in response to public concern about hazardous spill events, Congress passed the 1990 Oil Pollution Act (PL 101-380). Title VII of the Act establishes an Interagency Coordinating Committee on Oil Pollution Research. This Committee was charged with developing a plan and coordinating a comprehensive program of research, technology development, and demonstration among Federal agencies in cooperation with industry, universities, research institutions, state governments, and other countries.

-- Marine Environmental Response Program (+$1.0 million). The Interagency Plan prepared by the Coordinating Committee set out five major areas of research and development needs. These are: oil spill prevention, spill planning and management, spill response, fate and effects, and restoration. The U.S. Coast Guard is requesting almost $4.5 million in FY 1993 to support research, development, and monitoring activities detailed in the plan and also to address spills of hazardous chemicals. This represents an increase of about $1.0 million over estimated FY 1992 expenditures. Specifically, funds would be allocated as

follows: Spill Planning and Management, $1.2 million; Spill Response, $1.8 million; Regional Grant Program, $1.0 million; and aircraft surveillance for locating and monitoring oil spills (AIREYE), $0.5 million.

4. CONSISTENCY WITH NATIONAL PRIORITIES

The purpose of this section is to compare the major changes proposed in the Presidential budget for appropriations to support ocean pollution-related studies in FY 1993 with national ocean pollution-related priorities as presented in the Federal Plan for Ocean Pollution Research, Development, and Monitoring: Fiscal Years 1992-1996 (Federal Plan). The fifth version of the Federal Plan was recently completed and submitted to the President and Congress this fall as required under the National Ocean Pollution Planning Act (PL 95-273). The FY 1993 request for appropriations includes funding to support ongoing base programs that address all six goals of the National Ocean Pollution Program as identified in the Federal Plan. These goals are:

1) Understand the sources, fates, and effects of toxic materials entering the marine environment as a result of human activities;
2) Understand the sources, fates, and effects of nutrients entering the marine environment as a result of human activities;
3) Understand the sources, fates, and effects on marine organisms of pathogens and nuisance species that are introduced or influenced by human activities;
4) Understand the effects of losing or modifying marine habitats as a result of human activities;
5) Document the trends in the status of marine ecosystems; and
6) Understand the implications of marine pollution to human health.

Information on agency base programs can be found in the annual National Ocean Pollution Program: Summary of Federal Programs and Projects obtainable from the National Ocean Pollution Program Office. Additional information relative to the six goals of the National Ocean Pollution Program can be found in the Federal Plan for Ocean Pollution Research, Development, and Monitoring: Fiscal Years 1992-1996, also available from the National Ocean Pollution Program Office.

Funding increases are requested in FY 1993 to support new initiatives related to five of the six goals of the National Ocean Pollution Program identified in the Federal Plan. These are:

Understand the Sources, Fates and Effects of Toxic Materials Entering the Marine Environment as a Result of Human Activities. The Federal Plan identifies the need to better quantify the sources of toxic contaminants in the marine environment, to better understand some of the mechanisms that influence bioavailability and bioaccumulation of toxic substances in marine organisms, and to determine relationships between exposure and effects of toxic materials on the most sensitive life stages and population dynamics of marine organisms. Budget requests for NOAA's Coastal Ocean Program and the U.S. Army Corps of Engineers Environmental Research and Development Program are especially responsive to studies addressing these needs. In addition, the U.S. Coast Guard's Marine Environmental Response Program supports interagency planning and conducts research addressing spill response, management, and surveillance for oil and hazardous chemical spills.

Understand the Sources, Fates and Effects of Nutrients Entering the Marine Environment as a Result of Human Activities. The Federal Plan identifies the need to better quantify the sources of nutrient inputs to the marine environment, including the relative contributions from the atmosphere, surface and ground water, sediments, and offshore sources. The Federal Plan also points out the need to determine the effects of anthropogenic activities on nutrient cycling, and it identifies the need to conduct further research into the effects of nutrient fluxes on marine ecosystems, including the role of nutrients in the occurrence of toxic algal blooms and oxygen depletion. Budget requests from NOAA's Coastal Ocean Program include a proposal to conduct a national assessment of nutrient overenrichment and its implication to the marine environment. Both NOAA and EPA are proposing research to better quantify and understand aspects of nitrogen entering coastal estuaries.

Understand the Effects of Losing or Modifying Marine Habitats as a Result of Human Activities. The Federal Plan identifies the need to improve the Federal effort to map coastal wetland habitats and document trends in habitat loss and change. The Federal Plan also identifies the need to better understand how coastal habitats function to support living marine organisms and to relate this to our capabilities to restore or create coastal wetland habitats. In addition, there is a need to understand the effects of hydrological change on these ecosystems. These information gaps should be addressed in order to support the Administration's goal of "no net loss" of wetland habitats. The FY 1993 budget requests reflect a significant response to these needs by the Federal agencies. These include NOAA's Coastal Ocean Program and Habitat Conservation Program, the U.S. Army Corps of Engineers Environmental Quality Research and Development Program, and EPA's Water Quality Research Program. The major emphasis of these proposed efforts will focus on habitat function as it relates to marine resources, the effects of damage on habitats, and the well being of newly created or restored habitats.

Document the Status and Trends of Marine Ecosystems. The Federal Plan identifies the need for research addressing the development and use of indicators in ecosystem monitoring programs to detect changes in biological populations and to quantify risks to the ecosystem, particularly through the use of models. Budget requests responding to these needs have been submitted by EPA's Marine Disposal Research Program which proposes to develop a suite of indicators to assess changes in the Gulf of Mexico ecosystem.

Understand the Implications of Marine Pollution to Human Health. The Federal Plan identifies the need for more information addressing human health concerns in terms of evaluating exposure and risk from ingestion of contaminated seafood, particularly from pathogenic microorganisms and marine biotoxins which are related to marine pollution. Budget requests reflecting these needs were submitted by NOAA's Seafood Safety and Quality Program which will cooperate

with the Food and Drug Administration (FDA) to develop a voluntary seafood inspection service and conduct research on methods to reduce risks from eating contaminated seafood products.

APPENDIX

Table 1. Guidelines to Distinguish Between Direct and Indirect Ocean Pollution Programs

Components of the National Ocean Pollution Research, Development and Monitoring Program may be directly or indirectly related to marine pollution. The following guidelines are provided to assist in distinguishing between these two types of programs. The guidelines are to be applied at the program level. They are based on the mandates and objectives of the program rather than on the specific research or monitoring projects in the program.

- o Direct Programs. Programs should be considered as directly related to marine pollution if either or both of the following criteria are met:

  (1) The legislative mandate or regulatory requirement for the program is substantially based on concern over the environmental effects of a polluting activity. Polluting activities may include, but are not limited to, the following:

  - marine waste disposal
  - marine mining
  - marine energy development
  - marine transportation
  - fishing activities
  - accidental discharges
  - causes of nonpoint source pollution in coastal areas (e.g., farming, silviculture, urban/suburban development), or
  - alteration of coastal, Great Lakes, or other marine habitats.

  (2) The primary objective of the program is to provide information or learn more about marine pollution phenomena in one of the following areas:

  - effects of pollutants on specific marine organisms;
  - significance of marine pollution to human health;
  - input rates, sources, transport, fates, and transformations of pollutants;
  - ambient concentrations of pollutants in water, sediment, or tissues of marine organisms;
  - overall status of marine ecosystems and organisms with respect to pollution effects.

- o Indirect Programs. Programs should be considered as indirectly related to marine pollution if they fall within the National Ocean

Pollution Research, Development, and Monitoring Program and do not meet either of the criteria for "direct" relationship. In general the objective of these programs will be:

- to develop biological, chemical, or physical characterizations of marine systems;
- to develop instrumentation, analytical techniques or other technologies that would have applications independent of those related to marine pollution;
- to provide general logistical support; or
- to promote the effective management of a living marine resource.

TABLE 2. DIRECT PROGRAMS

FUNDING SUMMARY FOR THE NATIONAL OCEAN POLLUTION RESEARCH, DEVELOPMENT AND MONITORING PROGRAM
PROGRAMS DIRECTLY RELATED TO MARINE POLLUTION
FISCAL YEARS 1989-1993

	Funding in Thousands of Dollars				
	FY89 Estimate	FY90 Estimate	FY91 Estimate	FY92 Estimate	FY93 Presidential
Council on Environmental Quality					
Office of Environmental Quality					
Environmental Data and Monitoring Program	5	1	0	10	10
-- Total -- Office of Environmental Quality	5	1	0	10	10
U.S. Department of Agriculture					
U.S.D.A. Marine Pollution Studies					
Habitat Modifications Program	988	1,130	1,231	1,070	899
Nonpoint Source Contaminants Program	2,782	3,568	4,034	4,002	3,764
Point Source Contaminants Program	62	5	6	42	42
-- Total -- U.S.D.A. Marine Pollution Studies	3,832	4,703	5,271	5,114	4,705
U.S. Department of Commerce					
National Oceanic and Atmospheric Administration					
Coastal Ocean Program		3,440	6,000	7,100	9,500
Damage Assessment Program		2,500	2,500	2,500	1,250
Deep Seabed Mining Environmental Research Program	549	476	795	600	600
Environmental Research Laboratories Great Lakes Pollution Studies	3,022	3,022	3,022	3,022	2,300
Environmental Research Laboratories Ocean Pollution Studies Program	772	772	519	260	100
Estuarine Programs Office	2,160	336	0	0	0
Habitat Conservation Program			6,005	6,500	7,160
Hazardous Materials Response Program	2,289	2,700	2,476	2,443	4,117
Marine Pollution Data Support Program	88	58	58	58	58
National Fishery Ecology Program	7,540	7,540	7,083	7,083	7,083
National Marine Pollution Coordination Program	1,293	922	1,099	1,099	937
National Status and Trends Program	5,398	5,672	5,171	4,987	4,907
National Undersea Research Program		1,000	2,000	2,000	0
Prince William Sound Oil Spill		6,500	2,000	4,000	0
Sea Grant Ocean Pollution Program	3,200	3,805	3,800	3,800	3,800
Seafood Safety and Quality Program			10,747	13,344	15,366
Strategic Assessment Program	4,450	4,200	3,801	3,824	3,792
-- Total -- National Oceanic and Atmospheric Administration	30,761	42,943	57,076	62,620	60,970

TABLE 2. DIRECT PROGRAMS (CONTINUED)

U.S. Department of Defense					
U.S. Army Corps of Engineers					
Environmental Quality Research and Development Program	975	1,008	2,600	7,876	9,036
Navigation Project and Environmental Operations and Maintenance	9,215	10,455	8,120	9,977	7,585
-- Total -- U.S. Army Corps of Engineers	10,190	11,463	10,720	17,853	16,621
U.S. Navy					
Environmental Pollution Research and Monitoring Program	720	900	1,487	2,176	2,354
-- Total -- U.S. Navy	720	900	1,487	2,176	2,354
U.S. Department of Health and Human Services					
Food and Drug Administration					
Seafood Safety and Contamination Program	4,464	4,728	6,581	6,840	7,205
-- Total -- Food and Drug Administration	4,464	4,728	6,581	6,840	7,205
National Institute of Environmental Health Sciences					
Extramural Research Program	2,979	2,690	3,725	3,848	3,975
Intramural Research Program	402	320	345	358	372
-- Total -- National Institute of Environmental Health Sciences	3,381	3,010	4,070	4,206	4,347
U.S. Department of the Interior					
Minerals Management Service					
Environmental Studies Program	18,000	18,500	20,439	15,900	14,930
-- Total -- Minerals Management Service	18,000	18,500	20,439	15,900	14,930
U.S. Fish and Wildlife Service					
National Wetlands Inventory Program	1,878	2,520	3,020	1,900	1,500
Research and Development Program	4,100	4,100	4,100	4,400	4,100
-- Total -- U.S. Fish and Wildlife Service	5,978	6,620	7,120	6,300	5,600
U.S. Department of Transportation					
U.S. Coast Guard					
Marine Environmental Response Program	1,530	3,080	2,850	3,496	4,432
-- Total -- U.S. Coast Guard	1,530	3,080	2,850	3,496	4,432
U.S. Environmental Protection Agency					
EPA Marine Pollution Studies					
Chesapeake Bay Program	825	1,500	1,700	1,700	1,700
Energy Related Research Program	1,985	1,095	4,120	2,500	2,500
Environmental Monitoring and Assessment Program		2,750	7,200	9,300	9,510
Great Lakes Research Program	8,140	10,525	9,930	9,930	9,397
Marine Disposal Research Program	6,160	6,615	6,095	6,095	6,965
National Estuary Program	8,250	9,765	13,660	15,180	15,180
Reducing Uncertainty in Risk Assessment for Ecological Systems Program	450	2,920	3,000	0	0
Water Quality Research Program	8,625	10,580	10,990	12,090	15,433
-- Total -- EPA Marine Pollution Studies	34,435	45,750	56,695	56,795	60,685
TOTAL FEDERAL SPENDING FOR DIRECT PROGRAMS	113,296	141,698	172,309	181,310	181,859

TABLE 3. INDIRECT PROGRAMS

FUNDING SUMMARY FOR THE NATIONAL OCEAN POLLUTION RESEARCH, DEVELOPMENT AND MONITORING PROGRAM
PROGRAMS INDIRECTLY RELATED TO MARINE POLLUTION
FISCAL YEARS 1989-1993

	Funding in Thousands of Dollars				
	FY89 Estimate	FY90 Estimate	FY91 Estimate	FY92 Estimate	FY93 Presidential
Council on Environmental Quality					
Office of Environmental Quality					
Coastal Issues Analysis		8	15	20	20
-- Total -- Office of Environmental Quality	0	8	15	20	20
U.S. Department of Commerce					
National Institute of Standards and Technology					
Center for Analytical Chemistry	0	0	0	0	0
-- Total -- National Institute of Standards and Technology	0	0	0	0	0
National Oceanic and Atmospheric Administration					
Coastal Ocean Program		2,500	3,400	3,900	6,000
International Mussel Watch		100	0	25	0
National Marine Sanctuary Program	450	450	400	400	450
Ship Support Program	1,304	1,515	1,645	1,567	1,567
-- Total -- National Oceanic and Atmospheric Administration	1,754	4,565	5,445	5,892	8,017
U.S. Department of Energy					
DOE Marine Pollution Studies					
Ocean Margins Program				5,457	8,147
Physiological Ecology Program	406	0	0	0	0
Regional Marine Program	5,779	5,847	4,280	0	0
-- Total -- DOE Marine Pollution Studies	6,185	5,847	4,280	5,457	8,147
U.S. Department of the Interior					
U.S. Geological Survey					
Geologic Division Program	450	1,437	3,087	1,500	450
Water Resources Division Program	2,000	500	3,820	7,300	6,570
-- Total -- U.S. Geological Survey	2,450	1,937	6,907	8,800	7,020
U.S. Environmental Protection Agency					
EPA Marine Pollution Studies					
Exploratory Research Program	540	540	540	600	600
-- Total -- EPA Marine Pollution Studies	540	540	540	600	600
U.S. National Aeronautics and Space Administration					
Office of Space Science and Applications					
Ocean Biogeochemistry Program	510	536	563	585	500
-- Total -- Office of Space Science and Applications	510	536	563	585	500